C. Baldwin

Terms—Three Dollars per annum, payable in advance.

THE

SOUTHERN AGRICULTURIST,

HORTICULTURIST,

AND

REGISTER OF RURAL AFFAIRS,

ADAPTED TO THE

SOUTHERN SECTION OF THE UNITED STATES.

NEW SERIES.—VOLUME V.—NUMBER 3.

MARCH, 1845.

PUBLISHED BY A. E. MILLER,
No. 4 Broad-Street.

CHARLESTON:
PRINTED BY MILLER & BROWNE,
Old Stand, No. 4 Broad-street.
1845.

☞ Postage—100 miles 4½ cents; over 100 miles, 7½ cents. Three Sheets, monthly.

TENNESSEE STATE LIBRARY

CONTENTS.

PAGE.

Address by R. W. Roper, Esq. delivered in Columbia S. C. before the State Agricultural Society, on the Anniversary, November, 23, 1844—Concluded from page 49 81

Old Pickle for Pork 90

Insects injurious to the Farmer and Gardener, by Willis Gaylord, (Continued from page 98) 91

Guano, pronounced by the Peruvians Huano 98

Guano, permanency as a Manure 100

Experiments in the culture of Indian Corn, by Geo. Geddes 103

Corn—close planting, early working, by Richard G. Morris 106

Plaister and Ashes for Corn, by F. M. B 107

Manuring Lands Economically, by J. F 108

Sweet Potatoes 109

Necessity of supplying the soil with the constituents of the Crops grown on it 110

Management of the Peach Tree, by J. C. D 112

Cotton Planting 114

Pottle's Improved Cotton-Gin, by J. Cart Glover 116

The Red Potato—white within, by Q 117

Broom Corn—the seed is excellent to fatten Sheep 118

Comparative value of the Potato 118

To Sweeten Rancid Butter 116

Vegetables 119

The Chocolate Tree and its Uses 120

The Subscribers to the Southern Agriculturist are reminded, that the Price of the Journal was reduced last year to all those who paid in advance; those who are still in arrears for this and former years are respectfully solicited to make their payments.

Terms of the Southern Agriculturist.

Three Dollars, payable in advance;—for two copies $5; Societies and Clubs can be supplied with ten copies for $20, payable in advance.

The Southern Agriculturist.

(NEW SERIES.)

Vol. V. FOR MARCH, 1845. No. 3.

ADDRESS BY R. W. ROPER, ESQ.

DELIVERED IN COLUMBIA S. C., BEFORE THE STATE AGRICULTURAL SOCIETY, ON THE ANNIVERSARY, NOVEMBER 28, 1844.

[Concluded from page 49.]

The policy of the North exhibits a totally different result from the statements just given. The Census of 1840, shows that in each of the non-slaveholding, or Northern States, the relative force employed in Agriculture, compared with their total population, not only furnishes ample subsistence for all classes of the community, but by an excess enables them to export provisions. That with regard to incidental wants, and positive pursuits, adequate numbers are allotted, sufficient to combine a manufacturing with an agricultural system, making the success of each incidental to the other. Some remarkable developments establish the practicability of the plan, as I shall endeavor to illustrate, by comparing Northern with Southern adventure.

By the Census, it appears that the ratio of numbers engaged in Agriculture, compared with the entire population in each State of the Union, varies but from one individual in $2\frac{3}{4}$, to one in $4\frac{1}{2}$: thus Rhode Island and South-Carolina, have one individual in $2\frac{3}{4}$ engaged in Agriculture, and Ohio, one in $4\frac{1}{2}$, the other States ranging within that compass. But when the numbers engaged in Agriculture are thrown off, and those engaged in trades and manufactures computed, compared with the whole population, it becomes immediately apparent, how varied are the occupations of the North, how their mechanical force preponderates over the South and West, and how purely agricultural are the pursuits of the latter. Thus Rhode Island, as has been stated, with but one individual, in $2\frac{3}{4}$ engaged in agriculture, has one in five employed in trades and manufactures, and South-Carolina, with one in $2\frac{3}{4}$ engaged in agriculture, has but one in 57 employed in trades and manufactures. To make the statement more glaring, I must attach a compendium at the hazard of prolixity, and proceed to state that Massachusetts has engaged in trades and manufactures one in $8\frac{1}{2}$, Connecticut 1 in 11, New Jersey, 1 in 13, New-York, 1 in 14, New Hampshire, 1 in 16, Delaware, 1 in 19, and Maine and Vermont, 1 in 22; whereas Georgia, employs in the mechanic arts, but 1 in 86, Arkansas, 1 in 83, Alabama,

1 in 82, North-Carolina, 1 in 52, Tennessee, 1 in 46, Louisiana, 1 in 40, Kentucky and Indiana, 1 in 13; the other Western States gradually decreasing in the scale. From this it must be apparent to the humblest capacity, that the South and Western States which have been demonstrated so deficient in trades and manufactures, must be to the amount of their several wants dependent some where for supply, or according to the shedule of Georgia, has but one mechanic in 86 inhabitants, and Massachusetts, one in every 8, and South-Carolina, 1 in 52; then Georgia and South-Carolina, according to their requirements, must be in that proportion, tributary to Massachusetts or elsewhere. When we embrace all the South and South Western States in this dependency, and call to mind that their products are only Cotton and Grain, both of which must seek a distant market, conviction must flash upon every Southern man, that for his country, a new order of things is necessary.

No patriot or citizen of the South, can but feel humiliated and provoked, under such a condition of things, or maintain that he is free. What is freedom? Is it that right of listless indolence which the savage, the dotard, or the inebriate enjoys? Is it the right of locomotion, to wander over all the earth, and return whence we came more wretched and impoverished than before? Is it the right of expressing particular opinions in politics, religion, or any other subject? We enjoy all these: we squander our time, roam unchallenged, and exercise the right of thinking, speaking and acting, even to licentiousness. But I maintain this is not freedom still. As long as we are tributaries, dependent on foreign labor and skill for food, clothing, and countless necessaries of life, we are in thraldom. We can only be independent under the influence of just laws by industry, by the exercise of our intelligence, and by improving the advantages our country offers.

Thus have I attempted to demonstrate our waning fortunes, our dependance and prostration. The question can naturally be proposed, what is the remedy? A response may come more readily from the politician. Southern oppression is sensibly felt, and has been ably pointed out. By constructive interpretations the constitution has been stretched to cover every encroachment, but the drapery cannot conceal the feet of the image. There are constitutional means of redress or alternatives. It would be out of character in me here to attempt to define them, but until some remedy is granted, we must use all the palliatives in our power. I speak as an agriculturist, and wish you not to suppose I for a moment forget my proper subject. I say we can refuse to feed the oppressor. As agriculturists, an important responsibility devolves upon us, and by somewhat of a change of habit this can be redeemed. One great error amongst us is, that we plant too much, and farm too little; another, that we do not use a judicious economy in applying superfluous plantation labor to the necessities of our situation, to our domestic wants, to the making of our own negro clothes, shoes and plantation implements. We allow the negroes to become an expense of more than

two and a half million of dollars for clothing, corn, bacon and tobacco, and their plantation implements.

This drain can be avoided. Abstract from field work, a few negroes, principally the old and young, or those partially disabled to fabricate the articles just enumerated, and assume that the value of these articles, heretofore purchased out of the proceeds of the crop is saved, here will in addition be so much supplied, constituting the proprietor doubly a gainer, as he has saved and made. Or let it be granted that the crop may be slightly diminished by withdrawing from tillage some inefficient hands, still a trifling proportion will be maintained between the aggregate gain or loss. If in the gradual development of this defensive plan it be found advantageous to the State to manufacture, the inhabitants of the upper districts possess the capabilities to do so, the falls of the rivers are with them, and they may assume to other portions of the State, the present position of the North, supplying multifarious commodities, and diffusing and receiving reciprocal advantages. In making these suggestions, I point out to our upper countrymen a road to fortune. They can grow wheat, hay, grain, and raise stock, and may always find as good a market at home, as does the Kentuckian amongst us, and thereby, to a certain degree at least, remove exactions which press heavily, and commensurately advance thereby the general prosperity. The middle and lower sections of the State must remain essentially agricultural. By such developments, the farmer will learn that domestic manufactures, sectionally stimulates agriculture, in promoting the raising of stock, grain, hay, butter, cheese, bacon, flour, and all those supplies required for a class, removed from the tillage of the soil. These results have been demonstrated in Spartanburg, and around many of our large manufacturing establishments. The effect of this diversity of labor has been to extend competence among the neighboring people, to improve their morals, intelligence, and education, and establish a more respectable order of society. Dependent upon such a state of activity and industry, will be a consequent internal improvement exhibited in living, in improved roads, or construction of rail roads. Nor let it be lost sight of, that such a new order of things will place us in a state of preparation against all the chances of war, and release from a position where at any moment by supplies withheld, an enemy might cut off our means of subsistence, whilst his arms completed a melancholy catastrophe. Such are some of the expedients to avert Tariff legislation, to mitigate its stings, to remove its oppression, to build cities and villages within our own borders, and be truly an independent State. If South-Carolina should be compelled to divert any of her capital from agriculture, we need not despair No State in this confederacy is more adapted to manufactures than herself. Her numerous rivers, with their tributary streams, all furnish powerful and extensive water privileges. Her climate is congenial, and a valuable material furnished for manufactures at the very doors. A productive back country yields the means of cheap supply; a highly

improved road passing through the centre of the State, communicating with the far West, presents facilities of trade, while our pine land settlers offer a source of available labor. Our citizens have not been altogether oblivious to these natural advantages; they are beginning now to think seriously, or if I may be allowed the cant phrase of a thirfty people, "to calculate" their own chances of success. True, indeed, we are late in entering the contest, but we will have the experience of those who have preceded us, and may avoid their errors while we profit by their success, and may remedy our disease on the homoiopathic principle, *similis similia similibus.*

Mr. Mayrant of Sumter, was the first individual who attempted to introduce a Cotton Manufactory into the State. It was propelled by mules, and from irregularity of motion, proved a failure. An intelligent mechanic of Kinderhook constructed the machine, and had the candor to acknowledge, that negro agency in the spinning department, was equal to any other he had known, and that negroes were fully capable of being made excellent spinners.

Since this primitive effort, or since 1833, fifteen cotton and three small woollen mills, propelled by water power, have been in operation, together with four iron factories. The Cotton mills now drive 16,355 spindles, requiring the labor of 570 operatives. They work up 1,962,000 lbs., or near 7,000 bags of cotton into 1,746,714 yards of homespun, and have put an invested capital of $617,450. The Bivingsville Cotton Manufactory, with 1500 spindles, works upon an average 600 bags of cotton per annum, and adds $50,000 value to the raw material. The Iron Foundries employ 248 men, with a capital of $113,000, and distribute throughout the country near $280,000 worth of carron ware, nails, and bar iron. The South-Carolina Iron Manufacturing Company, produces $70,000 worth of iron, turned out in bar iron-castings and nails, employs 80 hands per annum, operates at a cost of $44,000, and yields $26,000 profit to the stockholders, and in addition, furnishes a market for 5000 bushels of corn. The corporations of Spartanburgh, with Nesbitt's, buy of the farmers, 15,000 bushels of corn. For these facts, I am indebted to the excellent Speech of Major Henry, on Productive Corporations.

Leather forms one of our most extensive branches of internal commerce. A capital of $257,682, is invested in its various branches, while 97 tanneries, employ 281 men. The value of leather made is about $468,829, and that manufactured into Saddlery, &c., $109,472, making $578,301. Much of this sum, however, goes abroad for the value of the raw material. All these factories consume about 70,000 bushels of corn and wheat, with a proportionate quantity of beef, pork, and other essentials of subsistence.

Northern villages have sprung like enchantment into being from their system of manufactures, and the planting or farming interest received commensurate advantages, the product of bread-stuffs and provisions have become stimulated, and the price of land enhanced. In no State has agriculture and the price of land increased, more

than in New Jersey, and according to her population, she is one of our largest manufacturing States. In the western part of New York, in Ohio, and the larger and Western States, are many Woollen factories, which consume all the wool raised by the farmers around them, who are in turn supplied with clothing adapted to their wants. These companies command the products of their immediate neighborhoods, are independent of legislation, and require no protection. The aggregate manufactures of these isolated establishments throughout the West, are estimated to amount to more than those of New England.—*Herald.*

Such facts should direct attention to Sheep Husbandry. To this department of agriculture, little attention has been paid. We number in the State but 232,981 Sheep, and cut 299,170 lbs. of Wool, while Vermont, with a population of 300,000, raises 1,631,000 Sheep, and cuts 3,699,000 lbs. of Wool. Of the congeniality of our State, and bordering Southern States, to the production of Wool, I would draw a favorable conclusion from relative circumstances, and would refer to historial facts, narrated before Congress by Mr. Collamar, of Ohio. He says that "in 1826, a deputation was sent from New Jersey, to Saxony, to purchase Sheep, which bore the celebrated Saxony Wool, and they brought out a number to this country. They were tried in Vermont, but found too small and weak to stand the severity of the climate, but in New Jersey, Pennsylvania, and other States farther south, they did very well." The mountainous climate of Spain and our own is similar, and as fine quality Wool might be grown in Pendleton, Greenville, Spartanburg and neighboring Alleghany Mountains, as on those of Estramadura. If we trace the introduction of this peculiar breed of Sheep, now called Saxony Sheep, into Germany, we will derive additional encouragement. Mr. Collamar continues, "in 1794, a small flock of fine-wooled Merino Sheep was sent as a present by the King of Spain to the elector of Saxony, whence the entire product of Saxony Wool, now of such immense value."

In 1809, the pressure on the Spanish treasury, during the invasion of the French, led to the sale of some valuable crown flocks. Our Consul, at Lisbon, Mr. Jarvis, obtained permission to purchase and export 1400 of those rare animals to America, which were distributed throughout the North, crossed with the native Sheep, and produced the first specimen of fine Wool in the United States, save that Mr. Livingston obtained a few sheep of the Spanish breed as a present, in 1792. The wool of Spain has long been imported into England for the manufacture of fine cloths, and fifty years ago, there was not a pound of Wool made in Great Britain, or in any country in Europe, except Spain, fit to make the coat of a gentleman. George III, tried the experiment of raising Merino Sheep in England, but did not succeed; 47,785,000 lbs. of wool are now imported into England, the larger portion of the finer quality from Saxony. In England, they have three breeds of Sheep, the Bakewells, the Cheviots and the Southdowns, all long wooled, of which a fleece

yields on an average from 5 to 8 lbs., but no cloth is made of this material, being all employed in worsted and coarse goods. Such examples of humble beginnings, conducting to such important results, might excite emulation, and in due time, we also, be clothed with the habiliments of successful industry.

Deficiency of capital, is sometimes urged as a drawback to our success, but let the political agitation of the State be once settled, capital will quickly come forth from its lurking places, and awaken every thing to life and vigor. Capital is like a coy virgin, it shuns tumult and war, and rejoices in law, order, and security. When our excitements shall have terminated, and our State's rights be established, the facilities of the country for improvement will invite capital and workmen, and we will again begin to prosper.

In every country, Agriculture, Commerce and Manufactures ought to be maintained; they constitute a bond of connection to the community, affording a more wholesome direction to investments. Works of national improvement and utility, ought to command the resources of an enlightened country, and become their care, their pride, and their support. Bank Stocks should not lock up too much of our money, and under present aspects, it may be pernicious that so pervading a propensity exists to investments in lands and negroes, to grow rice and cotton, and they in turn, reinvested in lands and negroes. Under most favorable circumstances, such property is incapable of being readily converted into active capital, and the precarious dependance of a crop is too often relied on, to meet all contingencies of debt and family support. The votary of wealth under such a system, exists in a state of anxious apprehension, sometimes of self-denial, whilst even in the midst of accumulating possessions. Often a cashless condition compels to stifle every generous impulse which might prompt to the patronage of the arts, or those scientific and liberal institutions which denote the prosperity, refinement and glory of a nation. In fact, the Planter too often lives poor to die rich, and when death claims his victim, hard earned accumulations are distributed among children who inflict upon themselves a like penance to result in similar privations. This is no fanciful picture. Where amongst us can be pointed out such fortunes amassed by individuals, as are accumulated in communities where Agriculture, Manufactures and Commerce are combined, where to acts of individual munificence, to public institutions, as distinguish Great Britain, or the New England States? On the contrary, under a purely agricultural system, we are constantly under whip and spur, though jaded and exhausted. The changes and fluctuations of the times, require a flexibility of occupation, and our State must vary her pursuits. Then at once will be called into action new sources of employment to various classes of the community—a diversified order of intellect will be required in the capacity of merchants, engineers, clerks, seamen, millwrights, tradesmen, superintendants, labourers, &c. And might I not conjecture, without derogating from the dignity or genius of the learned professions, that a

goodly number might be spared the honorable poverty and towering ambition of such pursuits, to participate more surely in fortune's favors. Many a poor planter also, might find his circumstances improved by employing himself, and perhaps his few hands, in some more lucrative calling, than reaping a scanty subsistence after a year of toil, and too often of blighted hopes.

The men of the South have been lauded for their munificence and chivalry, but never for their thrift, and whilst listening to the syren voices of flattery, wily tempters have carried off the substance. But our people should now learn the reality of their position, and embark upon a broader stream of fortune than that they have hitherto floated upon. They may be assured that dependance upon their own efforts will alone aid them, that the restrictive or protective policy of the govnrment is firmly fixed, and no considerations of feeling, no proud bonds, which past sufferings, past triumphs and future hopes, should have consecrated, will arrest one hour's pressure of the firm knot, which mammon himself has tied. Alas, that experience should have instilled this conviction, inculcated in such bitter anguish, loosening ties of paternal feeling, and banishing from memory every enthusiastic reminiscence. But we will not slumber under this vampire process, attempted to be disguised by legislative legerdemain; we will throw off the incubus, struggle with more practiced art, and manifest a determination never tamely to submit to the fate intended us.

Our State is rich in vegetable and mineral wealth; the surface of the country presents every aspect, from the alluvial swamp to the granite mountain, from the arid pine-land, to the fertile mould, whence spring the unbrageous oak and hickory, with a varied climate corresponding to these locations. Besides our present staples, Silk may be manufactured, the culture of Indigo may be resumed, at least to dye our home manufactures, the culture of wheat may be greatly extended, whilst products of the torrid zone may be acclimated and yield their luscious fruits. Superficial examinations of sections of the State prosecuted by Dr. Blackburn, Dr. Cooper and Mr. Vanuxen, have given flattering promise of meneral and geological treasure. Thirty species of minerals and ten of rocks have been collected. The Iron of York and Spartanburgh has been tested at the Navy Yard of Washingtion, and awarded priority above all other qualities found in the United States. Other ore is found in Abbeville and Pendleton. Marble of variegated colors may be furnished from Spartanburgh. Limestone may be burnt cheaply and in abundance in Spartanbugh, York and Pendleton. Gold with luring promise invites the sanguine digger tc Spartanburg, Lancaster, Union and Abbeville. Iron pyrites, from which sulphur may be obtained, and copperas also, is discovered in York, Spartanburgh, and Abbeville. Lead ore is found in Pendleton, Greenville and York, while granite of various qualities is abundant in many of the upper districts.

Whilst nature presents to our mountain districts these rich and glittering treasures, she has based the country below the falls of the rivers upon a calcareous formation, which, when spread upon the surface of the soil, imparts exhaustless fertility. This formation is marl, and consists, according to Jackson, of a variety of clay, containing carbonate of lime. The Report of our late Agricultural Surveyor, Mr. Ruffin, has imparted a mass of information on this manure, which has kindled a spirit of inquiry, and given an impetus to the agriculture of the country, resulting in incalculable value.

To improve these resources, we must avail ourselves of the proper means, employing competent instructors. We must have Agricultural and Geological Surveyors, pioneering in the march of improvement and searching out the riches of the land. We must have Agricultural and Geological Professorships in our Colleges, and lectures on these subjects delivered throughout the country, as now practised in Scotland, carrying information to the cottage of the husbandman, and removing the impression that agricultural knowledge is intutive. All intelligent and populous nations are now investigating the capacity of their soils, and employing the ablest Chemists and Geologists to analyze and instruct in the means of restoring the effects of exhaustion, or correcting deficiencies of structure. In England, Agricultural Surveyors are appointed to every county, and improved reports rendered every year. France, Germany and Switzerland, have become prototypes, and even Russia is cheering her chilled soil by the warm and invigorating process of scientific culture. Most of the States of this Union have made superficial examinations within their territories, and South-Carolina has but just commenced a similar investigation. I trust that no sectional jealousies or impatience of expected results will induce an abandonment of the measure. The investigations are yet incomplete and under progress, and consistency as well as our own advantage will, I hope, prompt to a continuance. The end of all government is at last but individual fruition and security, and in this enlightened age, these must be promoted by science. Permanent or increased population is a test of success, and in a population like the United States, with an insatiate propensity to change, and South-Carolina having so much to contend against, every source of employment should be laid open which could engage capital, yield employment, retard emigration, and advance the power of the State. I look to the results of this survey as tending materially to this end, and would press it upon public regard.

Indeed I experience a personal attachment to this measure, and would indulge a gush of feeling in addressing an appeal to each member of the Legislature for this cherished hope. Whilst an honored associate and co-worker with you, I encountered by the way-side this wretched foundling, feeble, friendless, and exposed to the contempt and obloquy of a thoughtless multitude. I regarded its condition, was struck with its comeliness and promise, fostered it in distress, and by your partiality and kindness, conferred on it a

local habitation and a name. Now, that the foster father is removed to private life, and can no more in the rude assaults of enemies, defend and protect the unhappy bantling, to your sympathy and generous care I consign the poor orphan. Receive with favor the Agricultural and Geological Survey of the State, continue your care—cherish and support, be its guardian and prop. It is now young, but promising, and will not fail at maturity to reward your nurture. Individual fortunes may yet be derived from it: like many an orphan, it may bring the blessings of heaven on the heart that pities, the charity that befriends, and become a crown of glory to the land where its honor dwelleth. And now gentleman, breathing one aspiration for the advancement of my native State, and a God-speed to the efforts of this Society, I offer my thanks for your attention, and bid you my grateful adieu.

Expense on the Negro Population.

Corn, 300,000 bushels purchased at 50 cts.	$150,000
Bacon, to ¼ the negro population, say 81,750 negroes, 2 lbs. each per week at 4½ cts. per lb.	382,590
Tobacco, to ½ the negro population, say 163,000 at 12 lb. per annum, deducting 51,519 lbs. raised from 1,956,000 lbs. consumed,	114,286
Clothing, $6.13 to an adult, $3.06 to a child, average $4.60 to 327,000 slaves,	1,504,200
Shoes, to ¾ the negro population at $1,	252,000
Plantation Implements, to 163,000 negroes, at $1 10 to each per annum,	179,300
	$2,582,358

Usual Clothing to a Negro.

6 yards of Woollen at 55 cts. per annum,	$3 30
Needles, Buttons, Thread, Trimmings,	12
6 yards Summer Homespun, at 10 cts.	60
Needles, Thread, &c.,	12
1 pair of Shoes,	90
1 Blanket in 3 years ½ cost per annum, at $4,	83
1 Hat, Cap, or Handkerchief,	25
	$6,12

Usual Food to a Negro.

Corn, 12 bushels per annum, at 50 cts.	$6 00
Salt, 12 quarts " " 1 ct.	12
Bacon, 2 lbs. per week or 104 per annum, at 4½ per lb.	4 68
Tobacco, 12 lbs. per annum, at 6 cts. and Pipes,	72
	$11 52

Plantation Implements.

1 Axe in 3 years, at $16 or per annum,	$1,33,			44
1 Spade "	12	1,00,		33
1 Hoe "	12	1,00,		33
				$1 10

Produce of Grain in South-Carolina.

	lbs.
Indian Corn,	14,722,805
Rough Rice,	3,080,000
Wheat,	968,354
Barley,	3,967
Rye,	44,738
Buckwheat,	72
	18,819,936
Produce of Oats,	1,486,208
Produce of Potatoes,	2,698,313
	23,004,457

Ratio of numbers engaged in Agriculture, Trades and Manufactures, compared with those engaged in Trades and Manufactures alone, in the North and South.

	Agr. Tra. and Man.	Tra. and Man.
Rhode Island,	one in 2¾	one in 5
Massachusetts,	" 4¼	" 8½
Connecticut,	" 3½	" 11
New Jersey,	" 4½	" 13
New-York,	" 3¾	" 14
New Hampshire,	" 3	" 16
Pennsylvania,	" 6	" 19
Delaware,	" 3¾	" 19
Virginia,	" 2¾	" 19
Maine,	" 4	" 22
Vermont,	" 3¼	" 22
Ohio,	" 4½	" 23
Kentucky,	" 3½	" 33
Indiana,	" 4	" 33
Illinois,	" 4	" 36
Louisiana,	" 4	" 40
Tennessee,	" 3¼	" 46
North Carolina,	" 3¼	" 52
South Carolina,	" 2¾	" 52
Alabama,	" 3	" 87
Arkansas,	" 3½	" 83
Georgia,	" 3¼	" 86
Mississippi,	" 3¼	" 90

Ratio between Population and Capital engaged in Manufactures.

	Population.	Capital in Man.		Population.	Capital in Man.
New York,	2,428,921	$55,252,779	Maryland,	469,232	6,450,284
Massachusetts,	737,699	41,774,416	Kentucky,	779,828	5,945,259
Pennsylvania,	2,001,566	31,815,105	Vermont,	291,948	4,326,440
Ohio,	1,519,467	16,905,257	North Carolina,	753,419	3,836,900
Connecticut,	310,015	13,669,139	Tennessee,	829,201	3,731,580
New Jersey,	373,306	11,517,582	South-Carolina,	594,398	3,261,970
Virginia,	1,036,799	11,360,861	Georgia,	691,329	2,899,565
Rhode Island,	108,830	10,696,136	Alabama,	" "	2,130,064
New Hampshire,	284,574	9,252,448	Mississippi,	" "	1,797,727
Maine,	501,793	7,105,620	Delaware,	78,085	1,589,215

OLD PICKLE FOR PORK.

Some persons place a high value on old pickle for preserving pork, even as high as a dollar a gallon, as it possesses superior properties for keeping the meat sweet and good. It being already charged with the juices of the meat, it will not so readily extract them from a fresh lot with which it comes in contact.

[*Boston Cultivator.*

From the Transactions of the N. Y. State Agricul. Society.

INSECTS INJURIOUS TO THE FARMER AND GARDENER.

A SERIES OF ESSAYS, BY WILLIS GAYLORD.

(Continued from page 62,)

That delicious fruit, the peach, is subject to the attacks of the curculio, as well as the plum and cherry; but its worst enemy is the borer, or *Ægira exitiosa* of Say, which attacks the tree in the same manner as the apple-tree borer does that tree. The male and female are very unlike in appearance. The male is smaller than the female, has four transparent wings, bordered and veined with steel blue; while the wings of the female are, the fore pair blue and opake, the hind pair transparent, with border and veins like those of the male. The coloring of the bodies too differ essentially, but the wings are sufficiently characteristic to mark the sexes. In its general appearance it has considerable resemblance to the wasp, more than to the ordinary moth. The female lays its eggs on the bark near the ground: the larvæ when hatched penetrate the bark, and devour that and the sap wood. The matter thrown out, and the exuding gum, mark their burrows at once. In the Northern States the winged insect appears in July mostly, but some will be found from June to October: hence there will be several broods or sizes of borers in the same tree. The moth will sometimes deposit its eggs high up the trunk on the forks of the branches, but mostly near the root. Dr. Harris states that the following method will effectually protect the neck or most vital part of the tree, and the one most liable to attack. "Remove the earth around the base of the tree, "crush and destroy the cocoons and borers that may be found in it, "and under the bark cover the wounded parts with the common "clay composition, and surround the trunk with a strip of sheathing "paper eight or nine inches wide, which should extend two inches "below the level of the soil, and be secured with strings of matting "above. Fresh mortar should then be placed around the root, so "as to confine the paper and prevent access beneath it, and the "remaining cavity may be filled with new loam. This operation "should be performed in the spring, or in the month of June. In "the winter the strings may be removed, and in the following spring "the trees should be again examined for any borers that may have "escaped search before, and the protecting application should be "removed." Lately it has been said that salt placed in a circle some six inches from the tree, will protect it from the borer, and promote the health of the tree. Salt, but not brine, should be used for this purpose. It is probable that heaping leached ashes around the tree during the summer, or washing the trunk with strong lye, as recommended for the apple borer, would operate favorably for the protection of the tree.

We have seen this borer on the cherry tree, and traced a row of perforations from near the soil to a considerable distance up one of

the main branches, the exuding gum furnishing a ready means of doing this. The pear-tree insect, *Ægeria*, differs from the peach-tree insect, in not being so large, and having the prevailing color of the upper side of the body, a purple black, with a golden yellow under side. This insect has sometimes done much injury to the pear tree, but is seldom in such numbers as to arrest the attention of the farmer, or cause such loss as the beetle before described.

If the farmer, or orchardist, finds upon any of his trees ants in abundance busily engaged in running up and down, or if he observes the shrubbery or grass under them covered with wasps, flies, and other insects fond of sweets, he may be very certain of finding, either on the under side of the leaves, or the ends of the tender twigs, colonies of the *aphis*, or plant louse, which, sucking the juice from the tree, convert it into the sweet viscid substance, of which these insects are in search. To the curious observer, the manner in which the ant obtains from the aphis this fluid, the tubes that furnish it, and the greediness with which they seek it, furnish a most instructive lesson on the instinct of animals; but we can only refer on this subject to the works of professed entomologists, Wilson, Harris, Say and others. The apple, plum, and peach trees, appear to be the favorites of the aphis, although there are few trees or shrubs that have not their colonies. A few years since, we had, among other plums, a fine tree of the white Magnum-bonum variety, under which passed a row of current bushes. Happening one day to observe that these bushes were covered with flies, wasps, ants, &c., we looked at the leaves of the tree, and saw instantly from their curled appearance that the tree was attacked by the aphis. Choosing a position which brought the tree between us and the sun, the curious spectacle presented itself, of a continued shower of minute drops from the tree, a literal rain of liquid honey: and this, falling on the bushes below, had drawn together the flies and ants that were upon them. The branches of the tree and the leaves were full of ants running about, ready to burst with their luxurious living, but evidently unable to consume the food as fast as it was provided for them. It is evident that a tree must suffer from such a rapid abstraction of the vital fluid, and the result in most cases shows such to have been the case. But though it is thus evident plants and leaves may thus be covered with a substance much like honey, we do not believe that what is termed honey-dew is the production of an aphis. We have seen a tract of wood-land containing some thousands of acres, in a single summer's night, so covered with this viscid sweet, that every leaf glittered in the sun's rays; and after a careful examination we could not detect a single aphis, a few scattered ones on some oak leaves excepted. We know of no remedy for the aphis, when it appears in such myriads on the leaves of trees; for, as they are on the lower side, showering the tree will produce little or no effect. When on the extremities of the twigs, as they not unfrequently are on grafted or vigorous shoots, if where they could be reached, we have killed them by dipping the branch in a vessel of some kind

containing soap-suds. A wetting with whale-oil soap and water, might be as effectual, but we have never used it.

The currant and gooseberry have both borers and caterpillars; the first penetrating some part of the trunk, and the latter feeding upon the leaves. If a currant bush with its foliage suddenly withers and dies during the summer, it is probably caused by a borer, which, penetrating the wood from an egg laid in the bud, forms a burrow in the pith of the stem, and kills the plant. All such injured stems should be cut up and burned at once, as the surest means of freeing ourselves from this pest. The worm sometimes appears in such numbers as speedily to strip the bushes of all their foliage; and as there are two or more crops of these worms in a season, the bushes are not unfrequently killed by the closeness of the defoliation. It is said that dusting the bushes infested by the worms with fine cayenne pepper, when the dew is upon them, will kill or expel the worm; and it is probable a decoction of the same substance showered over the leaves would produce the same result. In the few instances where our bushes have been attacked by this small green worm or caterpillar, showering plentifully with soap-suds has saved the bushes and fruit.

Although not coming precisely under the class of trees this section is devoted, to the locust, which as a widely spread and valuable tree, both for its timber and ornamental purposes, would seem to deserve a mention. In many places the borer has been so destructive, that farmers have given up planting it, few coming to maturity, or a size to be valuable. The beetle that attacks the locust is the Painted Clytus, *Clytus pictus*, and may be found on the tree in the month of September. This is the season of pairing, and the eggs are soon after deposited in clusters of six or eight in the crevices of bark. The eggs are white and easily detected. When hatched, which is in a short time, the young grub burrows at once into the bark, where they remain during the winter in a torpid state. In the spring they bore into the wood inwards and upwards in tortuous burrows, and as the original opening through the bark is soon closed, new ones are soon made by the grub for its castings. These operations cause the wood and bark to become irregular and unsound, and if the grubs are numerous the tree is soon destroyed. The grubs attain their full size between the middle and last of July, are then changed to pupa, and soon leave the tree as perfect insects. All its transformations are effected within the year, in this repect different from many of the borers that infest trees. The more vigorous the growth of the locust, the less liable it is to receive injury from the borer: indeed there is but little use in attempting to grow this tree where the climate and soil are unfavorable. Where the beetle attacks ornamental trees, as it is easily seen, a daily examination of the trunks, and catching or destroying such beetles as show themselves, is perhaps the surest method of destroying them. If the trees are much damaged they may be cut down at once, and new and vigorous shoots will soon take their place, which may more

easily be kept free than trees already infested. Locust trees frequently receive little benefit from washing with lime, lye, &c., because the application is made at a time when the insect is unassailable, as in the spring or early summer for instance. The proper time for washing trees infested with any borer is while the perfect insect is depositing its eggs, or immediately before or after. If a tree is whitewashed immediately before the egg is deposited on the whitewash, and this not being to the taste of the young grub, it generally perishes. If while the insect is active, many of them will be killed, disturbed and driven off, and the tree saved; or if immediately after the deposition of the egg, the escape of the larvæ is usually prevented, and its death is certain. This shows the necessity of an acquaintance with the habits of injurious insects, if we hope to assail them successfully.

—

SECTION IV. *Insects injurious to Domestic Animals.*

It must be considered a singular circumstance that scarce an animal of any kind can be named which is not made the prey in some form of animals parasitical or otherwise, lower in the scale of being than themselves. Even man himself suffers in this way, and the animals domesticated by him not unfrequently fall victims to some of the various insects that seek their food, and provide for their offspring by preying on the living. The hair, the skin, the flesh, the intestines, all have their injurious insects, and even the vital parts are not always exempt. Lice multiply in the hair and feathers; grubs infest the nostrils, skin and stomach; the Entozoa are found in the flesh of the living and *apparently* healthy beasts; and one species, the Filaria, has in more instances than one taken up its abode in the eye itself; worms of numerous varieties harbor in the intestines, and in many ways cause irritation, disease and death. Where the field is so large, it cannot be expected that every part of it shall have been fully explored; but much useful information has been gleaned, that, if spread before the farmer, can scarcely fail of being beneficial to him.

The horse is one of the most valuable of our domestic animals, and perhaps the one most liable to danger from the attacks of insects. Many good horses are lost every year from bots, or diseases connected with or produced by them. Some of the best writers on the horse and the insects injurious to the animal, divide the horse-bot into three kinds, all the progeny of a species of *Œstrus* or horse fly. The first and the one most common, is the parent of the bot commonly observed in the stomach of the horse. The name of this fly is the *Gasterophilus equi.* This fly deposits its eggs on the legs of the horse, and when the horse bites or licks the spot covered by the nits, the young larvæ adheres to the tongue and are carried into the stomach, where they fasten themselves to its coat, and remain until ready to assume the pupa state, where they cease to adhere to the coat of the stomach, are expelled with the dung, pass into the earth and through the chrysalis state, and finally emerge perfect insects.

This bot-fly is too well known to need description. Any person may satisfy himself of the manner in which this worm is produced from the egg, by scraping some fresh deposited ones from the hair, and placing in his closed hand, first moistening it with saliva; or he may place his hand thus moistened on the leg of the animal so as to cover a quantity of the nits, and in either case he will soon find his moistened hand covered with living larvæ.

Another bot-fly, the *Gasterophilus hæmorhoidalis*, deposits its egg on the lip of the horse, whence the larvæ are taken to the stomach. It also, and perhaps more frequently, deposits its eggs, during the evacuation of the dung, and the subsequent protrusion of the intestine. These bots are frequently found within the verge of the anus, whence their name. They are less injurious to the horse than the other kind, but sometimes occasion no little itching or irritation, when an injection of the linseed oil may be used to dislodge them.

A third bot-fly is the *Gasterophilus veterinus*. The horse, while feeding or standing in the harness, will at times be observed to fling up its head suddenly, as if hurt or alarmed; and frequently, if at liberty, will run off to some other place. The trouble is occasioned by this fly, which poising itself under the belly of the animal for a moment, darts between the fore legs and strikes the throat of the horse immediately between and above the upper curve of the jaw, depositing an egg at each blow. This is done by a sharp pointed ovipositor, and hard swellings are sometimes caused at that point, from the repeated stingings inflicted. It is supposed the red bot, found occasionally in the stomach of the horse, proceeds from this fly; but in what manner the larvæ makes its way into the stomach, after the egg is deposited in this way, is not very obvious. We have found bathing the stung part or the swelling, with spirits of turpentine, to act favorably, either by allaying the irritation, or, perhaps from its penetrating qualities, destroying the young larvæ.

In what manner the bot in the stomach of a horse causes its death, does not seem to be well understood; and from the fact that horses in perfect health, when accidently killed, have had their stomachs found filled with bots, some have denied that they ever do injure the horse or cause death. It is a law of nature, however, that all parasites, whether on plants or animals, do inflict injury and may occasion death; and the bot does not seem to form an exception to this law. And from the facts that they do sometimes fix themselves in the upper part of the windpipe and produce a fatal irriation and cough; that they sometimes collect in such masses in the first intestine as to completely choke it up and fatally obstruct it; and that when death attributed to bots has happened, the stomach immediately on death has been found perforated in a multitude of places, it seems scarcely possible they should not occasion death. The bot may not be guilty of all the mischief charged upon it, but enough will remain to justify us in considering it the most formidable insect enemy of the horse. Little can be said in favor of any of the thousand remedies prescribed for the bot, as skillfully constructed

experiments have shown that no agent sufficiently powerful to kill the bot can be brought to act upon them, that would not be equally fatal to the horse. Prevention, in this case, is better than cure. If, while the season of the bot-fly lasts, the legs be wiped down carefully once a day, with a cloth moistened in warm water, or where this is not convenient, if the eggs are scraped from the hair with a sharp knife as often as they are deposited, there will be little danger of enough getting into the stomach to produce injury.

There are two other kinds of worms that are sometimes injurious to the horse. One of these is the long round worm, *Lumbricus teres*, found in the stomach and small intestines. A smart dose of physic will usually expel these; but Youatt recommends, as not interfering with the feeding or work of the horse, emetic tartar with ginger, made into a ball with linseed oil and molasses, and given every morning half an hour before the horse is fed. The other worm is the needle-worm or *Ascaris*—small, and found principally in the rectum or large intestines. They are discovered by the irritation they cause about the anus, and in that case an injection of oil will generally prove an effectual remedy.

The sheep has several insect enemies, that at times cause great losses of this valuable part of the Farmer's domestic stock. Of these, one of the worst is the sheep-bot, *Œstrus ovis*. During the summer months, flocks of sheep may be observed in a state of great agitation, their noses close to the ground, stamping violently occasionally, and seeming to listen as if for some enemy. The cause of this disturbance is the presence of the fly of this worm, one of which is sufficient to alarm a whole flock. The fly is smaller than the horse bot-fly—of an ash-grey appearance, owing to white spots on a dark ground, and glistening wings. It makes its attack on the nostril of the sheep, in the mucous covering of which it deposites an egg, the young larvæ from which crawls up the nostril and makes its way into some of the sinuses of the upper part of the nose. Here it remains till the next year, when it quits its hold, descends to the nostril, and is usually expelled by sneezing. It penetrates the earth in which it passes the pupa state, and emerges a perfect insect in June or July. The irritation the worm occasions as it works its way up the nose, is maddening to the animal: the inflammation caused sometimes extends to the brain, and the animal dies in convulsions. Unless more than one is present, the sheep is in not much danger after the irritation is over; but where a number of them are found, they are very injurious in all their stages. Many remedies have been prescribed for this worm in the head of sheep, but unfortunately, as in the case of the horse-bot, with little success. Injections of soap-suds or of animal oils mixed with water, or of spirits of turpentine reduced with water, have sometimes been successful, when the larvæ was accessible; as have fumigations of burned leather or horn, causing the animal to sneeze violently. In some extreme cases, or where the animal was of great value, trepanning has been resorted to with success; but unless done skillfully,

the remedy would be more fatal than the insect. As preventives, we have found troughs to which the sheep could have access at all times, the bottoms to be smeared with tar, over which salt was to be strewn, to be one of the readiest and best; but on no account should an occasional tarring of the nose be omitted during the summer months, on those farms on which the fly is found. Furrows should occasionally be opened in sheep pastures, as instinct teaches the animal, when attacked, to fly to these or some other place where dry earth or dust can be found, as his best security against this enemy.

Another enemy of the sheep, which operates most injuriously to the health of the animal, and on its wool, is the well-known sheep tick, *Hippobosca ovina*. This animal lays only one egg, which is the nymph or pupa; is first white, and then brown, and fastened to the wool of the sheep. The sheep tick is found most commonly on poorly fed sheep in the spring; and all that are not taken off in the wool at shearing, seek refuge on the lambs, and bite and irritate them at pleasure. Our remedy for the tick, has been, at the time of washing, to rub a handful of soap on the animal before putting it in the vat; and as, in the process of washing one or two hundred, the water will become a strong suds, dipping the lambs in it will free the whole flock. In England, a common wash "is a pound of arsenic, boiled with a pound of soft soap and a pound of purified potash, in four gallons of water. When the arsenic is dissolved, the solution is thrown into a dipping tub, and forty gallons of water added, into which the sheep are plunged; care being taken to allow none of the fluid to enter the mouth of the animal." (Farm. Mag. 1828.) A German writer, Bock, advises that sheep infested with ticks be dipped in a decoction of the leaves of the common maple.

Sheep are exposed to the attack of a flesh-fly, *Musca carnaria*, which deposits its young in any offensive matter collected in the wool on any part of the animal; and these attack the flesh with such voracity, that unless speedy relief is afforded, the poor creature may be said to be literally eaten alive. It is remarkable with what instinctive certainty these flesh-flies will collect around an animal already "struck," all ready to contribute their part to its destruction. Occasionally the effects of this fly are severely felt in this country, but in a slight degree compared with those experienced in Europe. When a sheep is discovered to be infested with maggots, it should at once be removed from the flock, which should be taken from the field to another, as a partial preventive from the fly. The diseased animal should be thoroughly washed in strong soap-suds—the wool and all filth carefully removed, to show the extent of the evil; all the insects visible picked out of the lacerated flesh, and the wounded parts completely washed in spirits of turpentine. In the few cases that have occurred in our flocks, this course has proved entirely successful; a single application of the turpentine, if the wounded parts are thoroughly penetrated by it, bringing out the insects that

may be concealed from sight. It may here be remarked, that we have found this application of turpentine the best remedy in all cases where sores or wounds in animals have been attacked by flies, and if used previous to the attack, it is one of the most certain preventives.

[To be continued.]

GUANO, PRONOUNCED BY THE PERUVIANS HUANO.

The slowness of the sale of the few cargoes of Guano which have yet been imported into the United States, is to be attributed to—what? It cannot be to the want of all evidence short of personal experience, of its wonderful efficacy; because if any credit is to be put in the united testimony, of a great number of witnesses, in England; no doubt can be entertained of the efficiency of this manure, and the great increase of every species of crop to which it has been applied in that country; and it has been applied to all sorts of crops and under every variety of circumstances—Some perhaps will say, it may answer in the moister climate of England, but will not probably, in the more arid one of the United States—Well, but how is it in Peru, where the climate is still dryer than ours, Guano is their universal dependance?—No; it cannot be for want of evidence of its adaptation either to our crops, our soil, or our climate; for here, in our country, as far as experiments have been made, and results made known, the action of Guano has been as striking as in other countries—Some, nay many of these experiments have been published—The hesitation to make more universal use of this extraordinary substance must arise then from, either want of means to buy—or from the great difficulty that is always found, in diffusing generally, a knowledge of the existence and virtues of a new article, like this; or it may arise from that natural hesitation, which is salutary when not carried too far, which farmers are prone to entertain, about being the first to lay out the little money they have, on new things; but is the reluctance either rational or praiseworthy, where the evidence of the usefulness of the thing recommended, seems in all human calculation, to be so undeniable, and where a small trial at least, say of two or three hundred pounds, may be made, on one acre of land, at a hazard, if there be any hazard, of losing only two or three dollars?—Some of the most thoughtful, discreet, well judging men that we know of, after the best opportunities of judging, both on volumes of printed evidence in England, and on repeated experiments here, believe and maintain, that Guano, bought at $3 a hundred, and applied to land at the rate of 300 pounds to the acre, is cheaper than barn-yard manure, were that given to the farmer, if he had to haul it a few miles.

In his discourse, delivered by Mr. Skinner of Wilmington, he gives the following comparative estimate as furnished by Mr.

Pleasants, an extensive horticulturist, of the soundest character and judgment, residing within two or three miles of Petersburg, Virginia:

Manure—Cost of 30 wagon loads at 25 cts.	$7.50	
Hauling the same 10 days, at $1.50 per day, for team and driver,	15.00	
Carting out and spreading on 1 acre, with horse and cart,	3.00	
		$25.50
Bones—30 bushels bone dust at 55 cts.	$16.50	
Expense of hauling and application,	1.50	
		$18.00
Guano—300 lbs. at $3 per hundred,	9.00	
Expense of spreading,	1.00	
		$10.00

In all localities where manure is higher than the price stated in the preceding estimate (and in how few is it not?) and the distance to be hauled greater, the contrast will be so much the greater.

More recently, to wit, late in January last, Mr. S received from the same respectable authority, a letter, from which the following is an extract:

"I have been to-day to observe the progress of a guano experi-"ment on wheat—The guano was applied soon after the wheat "began to come through the ground, at various rates from 100 to "300 pounds to the acre. The effect is most striking. Through "the whole field is good, yet the guanoed part is *fully three times* "*better*, and the difference is greater every week."

It would betray a degree of obstinacy, little less to be censured and far less amiable than overweening credulity, not to admit that Guano has generally, on most crops which immediately succeed its application, a most salutary and fertilizing agency—but it is quite reasonable to inquire, with apprehensive caution, whether and how long its action will endure? There has not been sufficient time yet in England to settle this question definitively, much less has there been in this country.

The following article copied from an English paper may be deemed worthy of the space it will occupy.

We cannot close these hasty remarks without exhorting *all cultivators of Tobacco*, to purchase a small quantity, if it be only enough to apply to their *plant beds*, by which it is confidently believed from experiments last year in Maryland, that it will prove a complete protection against the fly, and a good supply of plants may be thus invariably insured, and a few hundred weight to try on tobacco in field, on corn and other crops, putting it, in all cases of *planted* crops, around the root of the plants.

We should not have ventured to devote so much space to a subject which some may think somewhat hacknied, if the season were not so near at hand for the trials which, if it be only to save time, ought every where to be made, with guano on spring crops.

To all those who are not familiar with the subject, it may be well briefly to advise them, that after very numerous experiments in England, the Peruvian Guano continues to maintain its superiority in the public estimation, over the African, as indicated by the difference in price—the African being quoted at last accounts at £5 to £5 5s., and the Peruvian at £10 to £10 10s. per ton. With this item in the way of information for what it may be worth, and leaving the farmer to choose between them, we submit the following:

The Permanency of Guano as a Manure.

This is a subject of great importance at present, when the importation of this manure is going on to a large extent, and when the propriety of using it, and extending its use, must be occupying the attention of farmers in all parts of the country. Many of the best practical agriculturists in this neighborhood, have long been satisfied of the permanent advantage of guano to the land. At the Highland Society's competition at Glasgow, in October, for seed-wheat, Mr. Lome Campbell, of Roseneath, who gained the £10 prize for white wheat, exhibited five varieties from his farm, the average weight of which was 65½ lbs. per bushel. The Chevalier wheat, weighing 65 lbs. was after turnips raised upon guano and although sown as late as 23d December, was the heaviest crop on the farm. At a recent meeting of the Rhin Farmer's Club, and other agriculturists, held at Drumore, when Mr. M'Culloch, of Auchness, factor to Colonel M'Dowall, of Logan, occupied the chair, the same subject was discussed by those present. The chairman Mr. M'Culloch, said,—In 1842 I applied to turnips on three different plots of ground, which were all contiguous, to the first *guano*, at the rate of four cwt. per acre—to the second, *bone manure*, at the rate of 30 bushels —and, to the third, good *farm-yard* manure, at about 20 tons per acre. The crop grown upon guano brairded first, and was singled four days sooner than the other, and continued throughout the whole season, to have a more luxuriant appearance; and when weighed, were about one sixth heavier than those grown upon bones, and about one fifth heavier than those upon dung. And the oat crop upon the guano was superior in quality, and the quantity of grain and straw was greater than upon either of the other two plots, and now I can distinguish no difference betwixt the grasses in quantity and quality.

So far as I could judge from the foregoing, added Mr. M'C., guano, as a permanent manure, has exceeded my most sanguine expectations. Following up the matter as a sow-oat, having manured the green crop with guano, Mr. M'C. said he found his oats after a guano green-crop, decidedly superior to the sow-out of other manuring. The oats after bone manure were lightest. His pasture, after guano green cropping, was an equally good and thick sole of grass to any other.

Mr. M'Bride, of Balkeer, having had occasion to make similar trials and experiments with Mr. M'Culloch, corroborated his views.

Mr. Anderson of Drumore, stated that he had grown potatoes with guano, at the rate of 4 cwt. per acre, which yielded him as good a crop as potatoes put in with fifty cart-loads of sea-weed, and twenty cart-loads of good farm-yard manure. His wheat crop was as good after guano manuring as after ordinary manuring; his sow-out was also as good, the pasture affording an equally good sole of grass with guano, as the ordinary manure did. He had also tried nitrate of soda, soot, gypsum, and guano, as a top dressing for grass, and, on the whole, he thought guano the best, and equally cheap. Mr. M'Culloch had tried guano also as a top dressing for pasture land; the effect was rapid and great. Both these gentlemen recommended the practice of forcing on a portion of the hay land with guano early in the spring, as a great benefit to horses and cattle, for feeding in the house, after the turnip has become scarce and fibry. A small patch and a small quantity of guano, will suffice to raise very early a quantity of good grass; and the second crop, or after cut, will be as heavy and productive as ever, while the permanent pasture will be greatly benefited.—*Caledonian Mercury.*

Copied from the Sheffield & Rotherham (Eng.) Independent, of December 21st 1844.

—

Since the above was in type, our eye has rested upon the following item, in the *Liverpool Mail* of 7th Dec. last.

"The Right Hon. Lord Moyston, who has tested the efficacy of guano, on his extensive farm at Pengwern, both as a fertilizer, and for purposes of *permanent improvement*, has ordered a ship load of this valuable manure to be consigned to him at the Foryd."

—

From the Sheffield & Rotherham Independent of 16th of November.

Adulteration of Guano.—Four vessels sailed recently hence (Liverpool,) for guano stations, ballasted with gypsum or plaster of Paris. This substance is intended for admixture with guano, and will enable the parties to deliver from the vessel a nice looking light colored article. Parties purchasing guano are very desirous of having it delivered from the vessel, as they believe they then obtain it pure. The favorite material for the adulteration of guano at the present moment, is umber, which is brought from Anglesea in large quantities. The rate of admixing we are informed is about 15 cwt. of umber to five cwt. of Peruvian guano, from which an excellent looking article, called *African* guano is manufactured.

[*American Farmer.*

—

To the Editor of the American Farmer:

I sympathise with those writers in your paper, whose efforts have been so strenously directed to encourage the use of guano, under the conviction that it is destined to exercise an important influence on the agriculture of some portions of our country. But in the outset, as at the present time, we cannot expect farmers to adventure very largely upon it. It is a new thing to us; and however highly its

TENNESSEE STATE LIBRARY

merits may be appreciated in England, whose practices are entitled to the highest consideration, yet we require also the evidence of our own senses. Heretofore in this country, the supply has been too limited, and the price too high, for any but amateur farmers and gardeners. The recent importations into Baltimore, and other cities, had not arrived in time for last year's crops; and it should be matter neither of wonder nor surprise that the cargoes should go off slowly. In the advertisements of northern importers too, no definite price appears to have been affixed to guano—a course calculated materially to retard its extension. In England it is quoted as regularly in the prices current as cotton or corn. The only importers whose prices are openly proclaimed, as far as I am aware, are Mr. Samuel K. George, of Baltimore, and Mr. Edwin Bartlett, of New-York—whose course has been manly and honorable, and who will no doubt find their advantage in it. These gentlemen have also placed it within the reach of every farmer who is in the habit of making outlays for the improvement of his land; and many of them are in the yearly practice of buying manure, plaster, clover seed, bones, poudrette, or something else. At 2 to 2½ cents per pound, the expenditure for guano is, without doubt, more economical than the same amount laid out in any other fertilizing substance.*

It is to the experience of the present year that we are to look for the merits of guano, as a fertilizer, to be established. Those who have kept pace with the progress of agricultural improvement, will make trial of it to a greater or less extent; and the result will be to confirm the wavering, to enlighten the ignorant, and silence those who scoff at every thing new and extraordinary. If for the coming season the demand may not be extensive, the foundation will have been laid for a greatly increased consumption. The seed will have been sown, which shall yield 20 to 50 fold. Let not then, those whose public spirit has prompted them to introduce this manure, and those whose office it is to collect and impart information to the farmer, be disheartened at the little progress which has been made. It is the slow and cautious steps of infancy. In a short time guano will become as popular here as it is in England. The writer of this has had experience enough during the past year to satisfy him fully, that for his own uses he can obtain nothing else so cheap, and whose action is so powerful, and he knows of many experiments now in progress, which, if they had been made a year ago, and the result been as decisive as it now promises to be, would have increased the demand for guano to a great extent. T. S. P.

Petersburg, Va. February 8, 1845.

---

* The only objection to Messrs. George and Bartlett's scale of prices, is that the largest quantities are beyond the reach of most farmers. If their lowest price was for 5 tons and upwards, it might be a greater benefit to the community.

EXPERIMENTS IN THE CULTURE OF INDIAN CORN.

We are indebted to our friend, Geo. Geddes, Esq. of Onondaga county, for the following detailed account of several experiments made by him, with great care, the past season, in the culture of Indian corn. They will be read with interest, and our readers will be glad to learn that these experiments will be continued with the same exactness the ensuing season. Mr. Geddes says:

The soil is a deposit of gravel mixed with sand and clay, resting upon a gypseous shale. The previous course of cultivation has been as follows, viz: In 1837, a crop of corn was raised on a heavy sod turned under that spring, and slightly manured with barn-yard manure. The yield was estimated at 65 bushels to the acre. In 1838, corn was again raised, and without any manure: estimated to yield 50 bushels to the acre. In 1839, it was sown with oats, and yielded a very heavy crop. Grass-seed was sown with the oats, which succeeded well. The next four years it was pastured.—Plaster was put on both corn crops, and on the oats, and once or twice on the pasture.

The ground was ploughed about the first of May, 1844, six inches deep, and planted on the 3d and 4th days of that month.

The variety of corn was the improved Dutton: that is, Dutton that had been selected from the earliest ears for a series of years.

Experiment No. I.

One acre was planted in hills three feet apart each way, six kernels in the hill. Fifty loads of half rotted manure was put on this acre, after it was ploughed, and harrowed in as well as it could be done; it being so coarse that it piled up a great deal before the harrow. The hills had a hoe-full of the best of the manure drawn in by the planter, and the corn dropped into it. It was hoed twice, and a cultivator was run once along each row, both ways, at each hoeing. The account of the cost of cultivation is as follows, viz:

To ploughing and harrowing one acre,	$1 50
50 loads manure, drawing and spreading,	12 50
2 days' work of one man planting,	1 50
Cultivating for both hoeings,	50
Hoeing twice, 3 days' work,	2 25
Harvesting, 3½ days' work,	2 63
	$20 88

Product, 70½ bushels—at 4s., $35 25.

Experiment No. II.

The other acre was cultivated as follows: One-tenth was planted in hills three feet by two apart, six kernels in a hill, and *without any manure*. The cost of cultivation by the acre, was $9 12

Product, 60¼ bushels per acre—at 4s. 30 12

Experiment No. III.

Another tenth was planted the same distance apart, and the same number of kernels in the hill as the last, and was manured by filling

each furrow as it was ploughed, full of barn-yard manure, *unfermented;* the amount used being at the rate of 150 loads to the acre.

The cost of production to the acre, was	$29 37
The Product, 70 bushels to the acre—at 4s.	35 00

Experiment No. IV.

Another tenth was the same distance apart, and had the same number of kernels in the hill as the last, and manured with coarse manure in the same way, and had beside, a top-dressing of half rotted manure, at the rate of 25 loads to the acre.

The cost of production by the acre, was	$36 37
Product, 80 bushels to the acre—at 4s.	40 00

Experiment No. V.

Another tenth was planted in drills, three feet apart, the corn four inches apart in the drills. It was manured with 25 loads of half-rotted manure, to the acre, put on after the ploughing.

The cost of production per acre, was	$18 75
Product, 55 bushels to the acre—at 4s.	27 50

Experiment No. VI.

The remainder of the ground was planted in hills three feet by two, six kernels in the hill, and a top-dressing of 25 loads half rotted manure to the acre.

Cost of production per acre,	$15 56
Product, 65½ bushels per acre—at 4s.	32 75

These experiments were made chiefly to determine *how thick* corn should be planted—what is the most convenient form to place the plants—and whether the manure should be rotted and applied to the surface, or ploughed under unfermented. The conclusion that now appears likely to be arrived at, is, that hills three feet by three feet apart, put in rows, so that a cultivator can be used both ways, is the most convenient form for planting, and that six kernels in each hill, will make the corn thick enough. I counted and made examinations that satisfied me, that at harvest, my hills averaged five stalks: no thinning was done, except by insects and accidents. That this is not too thick, is proved by experiment No. 6, where the hills were three feet by two feet, the product being 65½ bushels to the acre, and with one-half the manure that was put on No. 1, which was three feet by three feet apart, and the product only five bushels more to the acre. In fact, I believe that more bushels with the same manuring, would have been raised with the hills two by three feet, than three by three feet; but the extra labor of planting, hoeing, and harvesting, will more than counterbalance the gain.

The labor required to plough under *unfermented* manure, in any considerable quantity, is so great, and the fact that it is not felt until late in the season—and that the next ploughing must be deeper, in order to bring it all up and mix it with the soil—are great objections to its use.

Some of the results obtained by these experiments were unexpected. I know not why a hundred or more bushels to the acre were not raised in experiment No. 4, with manure both on top and under the furrow, amounting to 150 loads of coarse and 25 loads of fine to the acre; and that, too, alongside of land that *without any manure*, yielded more than 60 bushels to the acre.

I purpose the next year, to plant all this ground with corn, and carefully measure the product of each piece, with a view of learning the effects of this manuring for the second year.

GEO. GEDDES.

[*Albany Cultivator.*

CORN—CLOSE-PLANTING, EARLY WORKING.

Mr. Editor,—In accordance with the wish expressed by you when last we met, I proceed to give a statement of a crop of corn made on a small part of my low grounds, with the management, &c.

This land lies low, and is usually denominated false bank. It has been cultivated in corn for the last five or six years without any manure, and every year for the last nineteen (with the exception of one year) in corn, tobacco and wheat.

Last winter this land was thrown into beds thirteen and a half feet wide with a four-horse plough. In April three rows were opened on each bed with a scoop, and the corn planted two feet apart. When the corn was about four inches high, it was thinned to three stalks in each hill, a single coulter run next to the corn, the middle of the rows broken with a three coulter plough, and a small quantity of earth drawn around the plants with hoes. About the 20th May, a single-horse mould plough was run next to the corn, throwing the earth to the corn, the middle of the rows being ploughed with scoops, and the hoes following and completing the working of the crop.

The land by an accurate survey, contains three acres, two roods and thirty poles, and the corn made on the land, measured in the usual way, viz: shaking and heaping the measure, forty-three barrels three bushels, which is over an average of twelve barrels per acre. It is proper, however, to state that more than half an acre of this land is poor, from a wash made by the freshet in 1842, and a deposit of sand. If one barrel three bushels were allowed for the poor land, (and I think it a fair allowance,) then the three acres left, produced forty-two barrels, or fourteen barrels per acre; and when we take into consideration that a severe drought prevailed during the months of July and August, that from the middle of June until the corn was made, but two light showers fell, neither of which wetted the ground a half inch, the yield must be considered very

great. Last year the crop was much heavier, and I intended to measure it, but a freshet in August went over the land, and injured the crop so much, that I abandoned the idea.

An opinion exists, to a certain extent, that thick planting will not answer in dry years, but this opinion, I think, is erroneous, on rich land at least; and I am convinced that I made more the present year, dry as it was, than I should have done if my corn had been planted thinner. It is probable, however, that if the corn had been planted eight inches apart, with single stalks in the hill, that more would have been made, but not enough to compensate for the extra hoe work required, and the difficulty of working between stalks only eight inches apart.

Early working of corn I consider of great importance. Corn planted before the middle of April should never be worked or ploughed after harvest; for I have seen much injury done by late working, but never any good.

Respectfully, yours,
RICHARD G. MORRIS.

Monte Vidio, Dec. 18, 1844. [*Virginia Southern Planter.*

PLAISTER AND ASHES FOR CORN.

To the New-York Farmer's Club:

Gentlemen:—Last August, when on a visit to Newmarket, New Jersey, as advertised through the columns of the N. Y. Farmer and Mechanic, I noticed a field of corn thirftly growing, excepting two rows which were of but indifferent growth. Requesting, in your name, a careful comparative measurement of the produce, I am pleased to state that the friendly farmer has caused a report of his crop to be sent me. The corn upon the principal part of the field had been dressed with a mixture of ashes and plaister formed in the proportion of two bushels of ashes and one of plaister—half a gill of this mixture was applied to each hill of corn mentioned. The two rows excepted were not dressed with the ashes and plaister. The report states that—

From 49 hills, with plaister and ashes, he gathered 2½ bushels of corn in the ear.

From 49 hills, without any manure whatever, he gathered 1¼ bushels of corn in the ear.

It may be well to state that this corn was grown upon a grass sod, and that this experiment was made by Mr. Manning Randolph, of Newmarket, N. J.

F. M. B.

[*N. Y. Farmer.*

Shell Fruit, as walnuts, chesnuts, &c., may be preserved for a year or two by being divested of their outer shell, and thoroughly dried.

Gar. Chron.

MANURING LANDS ECONOMICALLY.

Messrs. Editors :—In oratory the most material item is *pronunciation*; in law cases, *evidence;* in agriculture, why may it not be affirmed, that *manure* is an article, which, in importance, exceeds all others, the Alpha and Omega of the whole art? Your instructive paper gives attestation to the justice of this sentiment, by the copiousness of the matter it contains upon this subject. And the farmer's inquiries should never falter upon a theme so vitally connected with his prosperity. Let no one then become impatient, at meeting the few remarks, which I beg leave to lay before your readers as an appendix to much already in print, and of greater merit than I can claim.

The subject divides itself into two main branches; the first regarding the means of obtaining the article, and the second the application of it. The former is oftener brought under consideration than the latter; not, as I imagine, with a design that either should be robbed of a due proportion of argument and elucidation to place it on its own proper basis; for it cannot escape any person of thought, to how little purpose skill and labor are lavished on ingenious methods of accumulation, if what has been obtained is lost through the want of care or skill in the use of it.

My object is, to exhibit a few thoughts, which I am desirous of expressing, the more for our having been given to understand, that the farming community are becoming convinced of the superior advantages of top dressing over other modes of manuring. Any system of cultivation found to be the best, after being sufficiently tested by practice, I would not hesitate to adopt. But, having embraced a theory, to appearances in the highest degree rational, I would not hastily abandon it, though some few facts, seemingly hostile to it should be alleged.

Experimental farming, to bring out important and fair results, and to establish great principles, must not be slightly conducted, nor expected to accomplish any thing by short and summary methods. If that be true which we have heard said, that any thing may be proved by the Bible; it is not less evident, that almost any thing may be proved by experiments in farming. But not to enlarge, I would say, that top dressings are not to be repudiated in the gross; for cases and circumstances may point out this as the best mode of recruiting the soil. There are lands well adapted to grass crops, which forbid the use of the plough, These must be kept in heart by spreading the manure on the surface, and this I think is best done late in autumn, to take the benefit of the snows and storms of winter, and to avoid the injurious influences upon it of a more vertical sun.

For years, our agricultural publications have been teeming with arguments and persuasions to the practice of economy in carefully sheltering our manure from the weather, until the soil is ready to receive it. The reason of this is, that being exposed to the constant action of the atmosphere, it undergoes decomposition, and is lost to

the owner by taking an invisible and aerial flight to regions unknown. And if there be good management in protecting manure-heaps from the powers of the external world, until they can be deposited where they have a chance to do their proper work in the vegetable kingdom, can it be prudent, when it is conveyed to the place of its destination, to parade it in the open face of heaven, and expose it, in thin array, to the fiery darts of a blazing sun, alternating rains and sweeping winds, dispersing its virtues to the ends of the earth? If the barn cellar be the best receptacle, by defending it against decomposing influences, until its decomposition is required at the roots of the grain to be fed by it; why then should not the earth next take it and preserve it in her bosom from being assaulted and driven from its station?

All tillage lands, that are to be benefited by manure, should receive it not superficially, but under the sod, where there will be a gradual development. I do not suppose that manures, left to decompose on the surface, are bereft of *all* their riches. Some nutrition may penetrate to the root in waiting for it. But still, much is unquestionably lost, that would have been saved, had it been mingled with the soil by the plough and harrow.

If to spread manure on the surface, and leave it there to undergo the necessary process of dissolution and decomposition, be the best mode of getting from it the blessing it contains; why do we talk of ploughing in green crops to restore to fertility an exhausted soil? Is it not from the known fact, that so little vegetable matter, which perishes on the surface, ever gets under it to rise up anew in thirfty plants to give substance to animal nature? And why is it so? Why is it not better that the food which the husbandman serves out to his needy and hungry crop, should be where it will gradually settle down and present itself to the springing grain just beneath the outward covering of the soil, in which the seed has been lodged, than to give it opportunity by deep insertion, to get out of reach in its descent into the subsoil? To this my answer is, that the quintessence of manure always has its course upward, never downward; and therefore cannot be lost by descending below the depth where it is left, under ground, to develope itself. There can be no error then, in burying manure to as great a depth as soil is required for the growth of what is planted in it.

These general remarks are proposed as leading principles. Their use in particular cases, will be determined by the nature of those cases.

J. F.

[*Boston Cultivator.*

SWEET POTATOES.

Sweet potatoes may be planted in ridges by throwing three furrows together, then draw the dirt up on both sides with a hoe or rake; open a trench on the top, and drop the slips five or six inches apart. Keep them in a warm cellar, in a garner, with chaff or dry dirt around them. Plant in May, and be sure to dig after the first frost has bitten the leaves.

[*American Farmer.*

NECESSITY OF SUPPLYING THE SOIL WITH THE CONSTITUENTS OF THE CROPS GROWN ON IT.

The new light which the improved state of science is throwing on agriculture, must be hailed by all *thinking* farmers with joy. At present, this light is restricted in its radiance, but a few, comparatively, out of the ranks of the learned, feeling its beneficial influence. But the time seems to be approaching—let us bid it speed—when in the culture of the earth, *science* will guide practice, and good farming —the *most profitable* farming—become an art which will require the skilful exercise of intelligent MIND, more than the exercise of physical power, to pursue it with the greatest success.

Chemistry—the patron-genius of agriculture—is now lending its aid as it never before lent it, to dispel the darkness which has too long enveloped the farmer in his pursuit, and teaching him to see, and enabling him to comprehend, the true processes by which his crops and animals are formed, and the necessary conditions required to make the one heavy and the other fat, at the least expense and with the most profit. This desirable light is being constantly diffused by scientific men, particularly in England and Scotland, in lectures and communications through the press, and thousands seek it as eagerly as they do their own prosperity, and, indeed, their prosperity depends, in an important degree upon it.

To no one, we think, are the farmers on either side of the Atlantic, more deeply indebted for efforts to benefit them by imparting valuable scientific knowledge, than to Prof. Johnston, of Scotland. The following abridged report of one of his late lectures before the *Dumfries Farmer's Club*, on the necessity of returning to the soil the constituents of the crops taken off, I think will interest many of your readers:

***

"The different substances of which plants are composed, must exist in the soil on which they grow: according to the nature of the plant to be reared, so ought the land to be manured. Thus, while wheat grain contained only two per cent. of ashes, hay contained 10 per cent. Hence the wheat required a much larger amount of combustible ailment than hay. It was true that the whole of the combustible matter was not obtained directly from the soil, as a large portion was derived from the air; but from five to ten per cent. of the straw of wheat was obtained from the soil; hence the provision made in some leases, that no straw should be carried off the land. Different kinds of hay carry off different quantities of inorganic matter from the soil, and consequently have different effects upon the land.

Every plant that grows, requires, in accordance with the nature and composition of soil, the proportion of the ingredients in its ashes. If no alteration of crop is made, nature will become exhausted in some of her resources, and the plant, for want of requisite nourishment from the soil, must die. We have facts to prove that nature will not forever grow the same plant on the same soil. The Black

Forest consisted first of oak, then of pine, and now it is again covered with broad leaved trees; and as with trees, so with crops; and as on a large, so on a small scale.

Different modes of husbandry have been adopted. Instead of oats being grown fifteen or twenty years on the same soil, the rotation of three white crops and six years' grass was adopted: this also, has become antiquated, and now the preferable alternation of white and green crop is adopted. Alternating crops, and adding such manures as have been carried off by preceding crops, is the only profitable mode of cultivation, while nature will also assist by the going on of certain circumstances, such as the decomposition of minerals, &c.

A soil containing just sufficient lime for a luxuriant crop of rye-grass, would be far deficient for either clover or lucerne. The soil must contain in abundance what your crop specially requires, and consequently the necessity of selecting the manure to suit the crop wanted.

The ground becomes exhausted in many ways. By cropping too long with either one kind or different kinds of grain, and carrying off both grain and straw, it becomes exhausted of some of its soluble matter by the action of rains, just in proportion to the wetness of the soil. By the application of proper manures, the waste may be replaced. Feeding on the ground will replace a portion of the waste of solid matter, by the dung voided by the animals; but a great portion of the *soluble* is lost, both by being, to a small extent, irrecoverable, and because of the direct waste by carelessness or ignorance. These soluble or saline substances, are principally contained in the urine of cattle, and just in proportion as it is lost, so is the direct waste. Guano is not a more valuable manure than the urine of cattle. By building suitable tanks, the whole of the barn-yard saline might be preserved, and 900 lbs. of good solid matter, equal to the best Peruvian guano, would be the annual produce of one cow. We have frequently been astonished at the results of certain saline substances when scattered over unhealthy plants, and by the first shower washed into the soil and immediately consumed by the plant as its proper and necessary food; and just in proportion to the ease with which it gets the substances upon which it is supported, and of which it is composed, will it vegetate and flourish.

To resume: Suppose any of the substances of which a plant is composed, to be already in the ground in sufficient proportion, then any addition cannot do good. Suppose soda to be in sufficient quantity for hay, any addition would be unprofitable for a rye-grass crop, while it would be of immense benefit to clover or lucerne. And again, some soils contain it in sufficient quantity for every variety of crop, consequently any addition would be unprofitable. Hence the reason of so many conflicting opinions respecting the utility of various manures. One tries gypsum, in whose soil it is deficient,

and finds it an invaluable manure; another applies it to his soil, which is already well supplied with it, and pronounces it worthless.

Milk contains so much bony earth, that in 75 years, a cow pastured on an acre of land, will carry off a ton of bones. Hence, (the Professor said,) some lands used for dairy purposes in Cheshire, had, in the course of years, deteriorated to such a degree that they were not worth more than from 5s. to 10s. per acre, just because the cows pastured on them had carried away all the bone out of the soil. Bone-dust was at length applied as a top-dressing, and the results were so astonishing, that the land increased 700 per cent. in value, and the rector's tithes were increased five-fold. Any or all other manures, had the soil wanted bone, would have proved ineffectual. The bones added just what had gradually been taken off in the lapse of years, in consequence of the peculiar husbandry of the district." [*New England Farmer.*

MANAGEMENT OF THE PEACH TREE.

Through the medium of the Cultivator—which my neighbor Tyson says, "finds its way every where," I wish to make known a new theory with regard to the cause of the premature decay of the peach tree; suggesting a mode for the prevention of a malady that has pervaded our orchards, in many instances, to their annihilation; the evil spreading far and wide, and exhibiting an inveteracy of character, that bids defiance to the thousand-and-one *cures* that have been guarantied to follow the adoption of about as many applications, external and internal, that have been made public. I lay it down as a melancholy fact, then, that the evil, whatever it be, and proceeding from whatever cause, has never yet been fully understood, or met by a proper antidote. And this conclusion will be more readily admitted, than the doctrine, "that the yellows and the worm proceed from the same source, both being *effects* and not the immediate *causes* of disease;" it being now generally conceded, that our trees are as effectually destroyed by the former as the latter; nay, that trees affected by the yellows, will assuredly be destroyed by it, without the intervention of the worm in any of its stages, and at about the same period of time. Here, then, is one step gained. Then comes the idea that the disease is contagious, and to prevent its spreading, it will be necessary to remove the tree the moment its effects are visible; as, also, that a cure may be effected, by careful culture of the soil, or a top-dressing of alkaline substances, to correct the acidity produced by the putricity of the juices of the tree, it being admitted that oxygen is its basis. But although this treatment might be beneficial as a preventive, the expectation of a radical cure would be hopeless.

A residence in this peach-growing district, affords incidents of the greatest variety, and cases for "practice," innumerable; indeed, it

might be regarded as analagous to "walking the hospitals," by the medical student; while frequent examination of the orchards of the large peach-growers of Delaware and elsewhere, have abundantly satisfied me, that the evil is progressing, maugre all the care and industry of men, superlatively endowed by knowledge, experience, intelligence and untiring perseverance, "to the contrary notwithstanding." Now these individuals have religiously kept their orchards under constant tillage, for the sole purpose of preserving the health of their trees; convinced, that without such incessant and careful culture, they could not be kept in existence; yet they find the disease is there, and with all their marling, manuring, and ploughing three times a year, that it is rapidly progressing; the only question being, how long has the death of the trees been delayed by a process at once so tedious and expensive? So then, at all events, the disease is neither prevented or eradicated by any means now in use—will they, therefore, permit one who is deeply iterested in the result, to suggest a mode of treatment, by which it is believed the evil is to be met and overcome.

In late visits to several of the nurseries of peach trees, both in Delaware and New Jersey, I have observed with wonder and astonishment, the gigantic size to which the trees are forced by every means of human ingenuity, many acquiring the height of 8 feet and 3 inches in circumference, from the bud of last autumn. And if to this be added the first year's shoot from the seed—say six feet, which is amputated in the spring, we have the enormous growth of fourteen feet from the seed, in a year and a half! Now I would ask, does not this extravagant drainage from the root, or whence so ever it may be supposed to proceed, produce a laxity, and a disorganization of the sap-vessels, sufficient to engender disease in the plant, which might then be compared to an overgrown youth? If so, putricity must follow, and then blight, in the shape of *life*—the worm; and the yellows, of necessity and according to the law of nature. And is it not a fact, that the trees now raised by our nurserymen, are twice as large in their growth as formerly; and do not these men pride themselves in the art of producing them of enormous size, purchasers also, generally preferring those that are so? I lately saw trees from the nursery of a person at Moorestown, N. J., measuring more than eight feet in height, an inch and a half in diameter, with roots sufficient in growth for trees of ten years old, one year only from the bud! Now, of what advantage is all this? None whatever, but a decided injury; productive, it is believed, of the very evil so much complained of. I know that some persons do not covet these large trees, preferring those of a smaller size; but if these are taken from the same nursery, they are, then, those that have sprung from small and weak seed, or been overgrown by larger plants, and are to be rejected, for the same reason that small apples, from among those of larger growth on the same tree, are always inferior, being generally diseased, or immature; so the evil is by no means avoided, or rather it is augmented.

At Manyunk, on the Schuylkill, I saw, sometime since, a small nursery of peach trees, situated on an eminence; the soil thin, and resting on a bed of disintegrated rock, but dry and healthy. Here I found the trees about four feet in height from the bud, close and vigorous in their form, with no rampant leader; the wood, hard, well ripened, and of a deep red color. The owner observed, his trees were sought after at double price, for besides being of the best sorts and true to their kind, they were sure to grow when transplanted; their roots being small and compactly formed around the body of the tree; besides this, they are free from disease, and would remain so, pointing to the well ripened wood, and the compact growth of the tree, as indicative of health and vigor of constitution. The following course of treatment is, therefore, with much confidence, recommended for adoption:

First, raise the trees on a healthy and elevated spot, without the aid of manure or extra culture with the view of forcing their growth; shortening all large and vigorous shoots that may be thrown out, even during their first and second season. The operation of budding is too well understood, to require either note or comment. At the time of planting out, let the branches, leaders as well as side shoots, be headed down to within three inches of the body of the tree, removing the tap-root, and others of overgrown size; taking care that the southerly aspect, which it bore in the nursery, is given to it in its new location. And from this period, let a right system of pruning be adopted, without fear of evil consequences. No tree bears the knife so well as the peach; and to its regular and systematic use, is a cure of its diseases to be looked for. Let, therefore, every overgrowing branch be shortened, keeping the head of the tree of regular dimensions. It is seldom, indeed, that we see a peach tree that is not top-heavy; yet the order of pruning must be the reverse of that practiced on the apple tree, where it is customary to thin out the middle branches, for in the peach, the bearing wood should be there retained, as also on the sides of the larger branches; by these means, much breakage would be prevented, and thousands of the finest trees be saved from destruction—it is the healthiest trees which fall, crushed by the weight of fruit hanging at the ends of long branches; not those affected by the yellows.

The perpetual cultivation of the peach orchard was resorted to, for the purpose of preventing the evils complained of, but would those who have practiced it the most vigorously say, if in any instance it has been found effectual? To those who still advocate such a course, as necessary to the well-being of the trees, the production of fine fruit, the eradication of the weeds, the destruction of the worm, and the prevention of the yellows, the following facts, fully to be relied upon, speak volumes.

Major Reybold, of Delaware, has an old peach orchard of about three acres, that has not been cultivated for five or six years, having been used as a hospital for sick sheep; yet from thence, for several

years past, the finest fruit sent to market has been picked. While speaking of the orchard, the Major said, a few years since I had peaches here, when my friends had none; my family ate $300 worth, after which I sold the remainder for $2,700.

Mr. Caleb Brinton, of Pequea, Lancaster county, Pa., has an orchard, one half of which has been kept under constant culture, the other half being meadow. While searching for worms the past season, full 20 for 1 were found on the cultivated half; the trees sickly and dying of the yellows.

Mr. Mahlon Kirkbride, of Morrisville, Pa., writes, by constant culture and laying lime to the roots of the trees, he has been able to keep the worms at bay; but, spite of all his care and attention, the yellows have carried them all off, and he has not now a peach tree on his whole estate.

But none of these gentlemen have tried the effect of a thorough system of pruning, commencing with trees in health, youth and vigor, and that had not been prematurely forced, in the nursery—a system which is advocated as likely to be far more important than the most careful cultivation, and all other "appliances and means to boot." If at any time, it be thought advisable to refresh the trees, this can be done by top-dressing, far more beneficially than by the plough, the use of which, in the estimation of those who adopt it, "gives fresh vigor to the growth of the tree"—the very thing to be deprecated. The peach orchard then, will become a sheep-walk or a hog-pasture, affording a profit instead of a loss, in seasons when fruit fails; the sheep performing the labor of pruning the lower branches of the trees, on which the fruit is always inferior, and keeping down the weeds far more effectually than can be done by the plough; while the hogs will do all the *cultivation* that is necessary, and clear away the diseased and fallen fruit; all stock being removed before the time of ripening. I lately observed on the farm of Mr. Bryan Jackson, of Newcastle county, Del., that a portion of the peach orchard had been thrown into the hog-pasture; here the trees were most vigorous; and under each, the tramping of the hogs had done, in the way of cultivation, as much as was deemed necessary. The trees are four or five years old; and I was glad to find that the intelligent owner intends at once to lay down the whole orchard to permanent pasture, for the purpose of grazing sheep and swine.

J. C. D.

Salem, New-Jersey, Nov. 12th, 1844. [*Albany Cultivator*,

COTTON PLANTING.

We call the attention of farmers to our planting of cotton similarly to the plan recommended by Dr. Cloud. But, as its results were highly unfavorable, we must do the plan full justice, by stating that we did not pursue the directions closely. We will give the mode we pursued, and then endeavor to account for our failure

We may even fail in this, however; yet, as it will lead others to think on the matter, we trust in doing good.

The piece of land selected, was four acres, nearly square; full one-third of it showed clay quite plainly; the balance of it was rich enough to have grown 1500 lbs. of seed cotton. The lot had been for three years in millet grass, rye sown for grazing, and in native grass. In August, '42, we hauled on a portion of the poorest, near 1½ acres, 100 cart-loads of manure; had it well turned under, with a crooked coulter, as a subsoiler, following in the same furrow; in the winter of '43 and '44, we had hauled on the whole lot enough to give a dressing of about 700 bushels per acre; scattered and ploughed the land deep and thoroughly; we then had the land laid off 5½ by 3 feet, and had manure put in the centre of furrows in the upper portion, having also given the same part much more manure than the other. We soaked the seed in brine, rolled in lime, and dropped; dates, with quantities, &c., we can give, but it is unnecessary. We planted after the rain in March, when the seed did not generally vegetate; had to re-plant twice, without getting a stand at last. We cultivated the land well; not as some farmers do—killing the grass—but we cultivated the crop, and our yield was 5223 lbs., from four acres and a fraction. The same kind of seed, from Nutt's, we planted on ordinary land, and think the yield exceeded 1500 lbs. per acre; we cannot say certainly, as the six acres of it were in the same piece as other seed; the whole piece averaging a bale per acre; some of it very indifferent, however.

The fault was not in thoroughly preparing the land, or in proper culture, but in an undue quantity of vegetable matter. We know that cotton planted in new ground makes much wood and leaf, grows early and late, but does not make fruit, and the fruit is very late in maturing. This was the case with our premium cotton. It grew rapidly until frost, and was a dense shade even at the distance we gave it, and the number of immature bolls far exceeded the quantity gathered. We know not what the result would have been had we run a coulter through the cotton, to the full depth of the soil, but feel rather as if the growth would have been checked, and tended to produce fruit. We know that this would be the effect on fruit trees, and suppose similarly on cotton. That we injured the produce by manuring, is very certain, for the same land will, three years hence, exceed the quantity sowed, as it did when last planted to cotton.

We have grown cotton, and seen it grow, on rich low ground when new, and have never seen any man but what would be deceived in the yield. The reason is, the number of bolls and blooms that would make on similar old land, will not mature on new ground. The great quantity of vegetable matter tends to grow wood instead of fruit, which is always against a full crop of fruit.

We did not put on the land the large quantity of manure expecting a proportionate quantity in return for that crop—but that it should be decaying, and become thoroughly incorporated with the

soil, intending the lot for grass in 1846; this year to be planted to corn; this crop to be cut clean about 1st of Sept., and then the land sown in grass seeds. We shall manure again, to carry out our plan, as the lot lies adjoining the stable lot and barn, from which it is convenient to haul manure, and also convenient to gather in grass for stock, as well as to gather hay. In fact, the manuring was to carry out our plans of improvement, and the cotton crop quite a secondary consideration, though we did calculate on two bales per acre. We may again err, but we shall plant it in corn for a large crop, intending to haul every stalk into lots to make manure.

[*South-Western Farmer.*

For the Southern Agriculturist.

POTTLE'S IMPROVED COTTON-GIN.

Lifeland, near Walterboro, Feb. 16th, 1845.

Mr. Editor,—Your communication of the 11th inst. I have just received. The Gin to which you allude, is the invention of Mr. John Pottle, of St. Mary's, Georgia. By the recommendation of Col. Walter, and seeing his Gin in operation, I was induced to procure one. The result has been to my entire satisfaction, and I have had no trouble since the second week of its operation. Mr. Pottle does not (it appears) send any directions as to the running gear; I was therefore, put to great inconvenience at first; I, however, soon found out the necessary proportions. My Gin came to me to work with a rope instead of a band, which I tried and found would not answer, as the rope was constantly wearing out and causing too much loss of time; consequently I took the small wheel off which was attached to the shaft of the Gin, and substituted one for a band; I also have a pulley block, which slides up or down in a frame work, for the convenience of tightening the band at pleasure. I likewise found it necessary to attach a slat to the pressure clamp of the upper roller, which prevents locks of the seed-cotton from hopping over into the ginned cotton. The house I have it attached to is 36 feet square; such running gear as suits the saw-gin will answer; it requires one prime intelligent fellow to feed it; it should of course be kept well oiled; two good mules will work it all day with ease, ginning from 250 to 335 pounds of clean cotton, requiring but little moating, and as far as I am a judge and in the opinion of such of my neighbors as have seen it, the staple is less injured than by the foot-gins. In

short, I am convinced that no cotton planter ought to be without one. The gin is very simple, but every thing fits perfectly true, and requires to be kept so—hence it will not do to leave its management in the hands of the careless. The seed-cotton should be dry, well sorted and whipped. It is impossible for me to describe all the little alterations I have made; but it will afford me pleasure to let any gentleman examine it themselves.

With great respect,

J. CART GLOVER.

N. B. Mr. Pottle sends with the Gin a plane block for making the rollers and groveing them. The rollers I make out of a swamp hickory. The cost of Gin was sixty-five dollars.

For the Southern Agriculturist.

THE RED POTATO—WHITE WITHIN.

I lately conversed with a well informed gentleman—an experienced planter from the southern part of Alabama, and was asked if our planters cultivated the red-skin potato, which was very white under the skin, having a flavor of the chesnut. I told him that it was cultivated on the sea-coast and much esteemed, because it came in early and was very conducive to health; that it was also very profitable when sent to market in the towns—but that this kind soon became watery, lost their flavor, and, I believe, soon rotted. He expressed his surprise at this, and suggested that the difference in Alabama may result from the difference in culture and preserving them; that they were better liked for food by man, and by stock of all kinds, and poultry of every description, than any other kind of their productions, and remained sound and sweet until the June following, or until other potatoes came in. He said that when a crop of this kind was wanted, they ploughed a few acres, and in a trench they laid the roots in a line eight or ten inches apart, the trenches about four feet apart. That when the potatoes sprout and the sprouts are six or eight inches long, they make their beds as our planters do for planting slips; but they do not wait for the vines to run as our planters do for slips—they pull the sprouts up from the roots, and place them upright in the beds eight or ten inches apart, in holes made with a stick for that purpose—like cabbage plants. That their

climate is a little warmer than ours, but that this is not done until May or June, and the red-skin potato not taken in until after the others. That when harvested, they never put them in long potato houses as in our State, but always in hills or conical banks, each containing from ten to fifteen bushels, well covered with straw or pine-trash, and well covered with earth to protect them from the changes of weather; the hills are opened in succession as wanted for use.

Mr. Editor, will you intercede with some of your friends to give this plan a fair trial, and report the result both of the crop and mode of preserving it. Q.

We understand that some of our planters on the Santee, are in the habit of using the above method of preserving their potatoes until late in the fall, when they send them to market, and obtain excellent prices for them. Will they not give us their experience in the matter. EDITOR.

BROOM CORN—THE SEED IS EXCELLENT TO FATTEN SHEEP:

Albert Hibbard, Esq., of North Hadley, tells us he makes use of all the seed of his broom corn to fatten sheep—that they are very fond of it, and will fatten better on this than on Indian corn. Broom corn is raised in great quantities in the river towns, where the brooms are made up and distributed to all quarters of the country.

We have often raised the corn for the sake of the brush, but we have never made much account of the seed, though hens are always fond of it. Hogs too will eat it, though we think it has seldom been converted to meal for hogs. Mr. Hibbard thinks the broom corn-seed more valuable for sheep than oats or any grain, pound for pound. [*Boston Plough.*

COMPARATIVE VALUE OF THE POTATO.

One hundred pounds of mealy pototoes are equal, for nutriment, to—

Meat without bone,	25 lbs.
Beans,	28 "
Wheat bread,	35 "
Parsnips and carrots,	190 "
Turnips,	300 "
Cabbage,	400 "

These experiments of Berry & Herring, establish the fact that 3 lbs. of potatoes are equal for nourishment to 12 ounces of bread and 5 ounces of meat. [*Am. Ag.*

TO SWEETEN RANCID BUTTER.

The Echo du Monde Savant says, "An agriculturist in the neighborhood of Brussels having succeeded in removing the bad smell and disagreeable taste from butter by beating, or mixing in fresh water with chloride of lime, he was encouraged by this happy result to continue his experiments, by trying them on butter so rancid as to be past use; and he has restored to butter whose odor and taste were insupportable, all the sweetness of fresh. This operation is extremely simple and practicable to all; it consists in beating the butter in a sufficient quantity of water, in which put twenty-five to thirty drops of chloride of lime to two pounds of butter. After having mixed it till all its parts are in contact with the water, it may be left in it for an hour or two, afterwards withdrawn, and washed anew in fresh water. The chloride of lime having nothing injurious in it, can with safety be augmented; but after having verified the experiment, it was found that twenty-five or thirty drops to a kilogramme of butter were sufficient.

VEGETABLES.

By consulting past history we will find, that, until lemon juice was used by seamen, mortality on ship-board, from the disease then so well known as scurvy, was immense. It is said that Admiral Hosia buried no less than two crews, during a West India voyage, principally from the ravages of the scurvy. We know, furthermore, that plagues and pestilences, do not visit civilized countries now as heretofore; and though quarantine regulations may have affected great good, yet the change of diet from almost entirely salt meat, to a mixture, has probably done more, not only in warding off pestilences, but also in really prolonging life. In the early part of the reign of Henry VIII, not a cabbage, turnip, or other edible root, grew in England.

We allude to this matter, not for its historical effect, but as an argument to induce our farmers to commence in time, and provide an abundance of vegetables. We are no Grahamite; rather do we look on this theory as a species of fanaticism—(not religious, however, for we know that vegetable eaters do not all claim to be influenced by religious feeling,)—but we do believe, that there is far too much meat eaten, especially of salted pork, either as bacon, or as barrel pork. We have, in our very limited experience in the practice of medicine, had more cases of fever under our charge, where no vegetables were used, than in those families who provided an abundance—other things being equal. We have, ourself, used no meats at all, unless from home, for months together; and have not, for many years, used meat for breakfast or supper, as a rule. We do not know that our health, or strength, or ability to pursue our ordinary vocations, have been in the least impaired by this course. On the

other hand, we believe our peculiar location, with our general exposure, would have brought on disease, but for our habits of eating and drinking. We may be in error, we found our theory from the experience of the past, and our own limited knowledge. At all events, it is not one that can mislead, for the saving is fully equal to the trivial labor of making, besides the comfort. If there be no otber good in the matter, there is something farmer-like in having a variety of vegetables on the table, and the madam is not so much at a loss when strangers drop in.

It is now the proper time to begin gardening—if not before commenced—and we would advise making the garden spot rich; spade or plough deep; make the earth fine, thoroughly mixing manure (well rotted) with the soil. [*South-Western Farmer.*

THE CHOCOLATE TREE AND ITS USES.

What is generally called Cocoa is merely the berries of Theobroma Caoao, pounded and drank either with water or milk, or with both. Chocolate is a compound drink, and is manufactured chiefly from the kernels of this plant, whose natural habitat would seem to be Guayaquil, in South America, though it flourishes in great perfection in the West Indies. It grows also spontaneously on the banks of the Magdalena. Mr. Schomburgh, in his recent exhibition into the interior of British Guiana, found the country abounding in Cocoa, "which the Indians was most anxious to secure, as the pulpy arillus surrounding the seed has an agreeable vinous taste. Singular to say, however, they appeared perfectly ignorant of the qualities of the seed, which possesses the most delightful aroma. Mr. Schomburgh states, they evinced the greatest astonishment when they beheld him and Mr. Goodall collecting these seed and using them as Chocolate, which was the most delicious they had ever tasted." The height of the Cocoa shrub is generally from eighteen to twenty feet; the leaf is between four and six inches long, and its breadth three or four, very smooth, and terminating in a point like that of the orange tree, but differing from it in color; of a dull green, without gloss, and not so thickly set upon the branches. The blossom is first white, then reddish, and contains the rudiments of the kernels or berries. When fully developed, the pericarp, or seed-vessel is a pod, which grows not only from the branches, but the stem of the tree, and is from six to seven inches in length, and shaped like a cucumber. Its color is green when growing, like that of the leaf; but when ripe, is yellow, smooth, clear and thin. When arrived at its full growth, and before it is ripe, it is gathered and eaten like any other fruit, the taste being subacid. [*Boston Cultivator.*

The following is Sir Astley Cooper's chilblain liniment: Take of camphorated spirit of wine one ounce—solution of the subacetate of lead, half an ounce. Mix and apply it in the usual way.

DISSOLUTION.

The undersigned have sold out their entire interest in the "Bommer Manure Method" to Mr. George Bommer, of N Y; in consequence of which the partnership heretofore existing between us, was dissolved on the 6th ultimo by mutual consent.

Our agents are requested to make up their accounts to the 6th of November, and forward them to Tho. M. Abbett, Baltimore who is solely authorised to settle.

For any transactions after that date they will account to Mr. Bommer.

TH. M. ABBETT,
CHARLES BAER,
JOHN GOULIART.

Baltimore, Dec. 14, 1844.

N.B.—Charles Baer is the General Agent for Mr. Bommer in Georgia, and John Gouliart his General Agent for the State of Maryland.

BOMMER'S MANURE METHOD.

We have the satisfaction to announce to the Planters, Farmers and Gardeners of the vicinity of Charleston, that the Books with the Patent right, which Mr. Baer has caused to be sent on to the subscriber for disposal, have been received from Baltimore, and may be had of him on the terms before specified. Those who have bespoke them, will do well to call and obtain copies early. He also has received a report made to the Legislature of Maryland in favor of the method, which is daily gaining the public confidence whenever it is known. In the mean time we refer our readers to the last December and March Nos. of the Southern Agriculturist for some information on the subject.

A. E. MILLER,
No. 4, Broad-street.

PERUVIAN GUANO.

The subscriber has made arrangements with the Agent of the Peruvian Guano Company, by which he will be able to supply all orders for this most powerful of manures. The Peruvian is far superior to the African or Ichaboe Guano, as both analysis and experiments have proved. As this manure is believed to be not only the most powerful but at the same time the most economical known, our planters and farmers are invited to make trials with it the approaching season on their crops of cotton, corn potatoes, &c. &c. It has been extensively used in Great Britain and recently in the United States. Pamphlets containing accounts of these experiments will be furnished to those *wishing to make trial of it*, by applying (post paid) to the subscriber.

All orders from *unknown* correspondents, must be accompanied with a city reference, and the Guano *paid for on delivery*.

JOHN D. LEGARE,
No. 81 & 83 East Bay.

Dec. 1st, 1844.

RUFFIN'S CALCAREOUS MANURES $1.

ELEMENTS OF AGRICULTURAL CHEMISTRY,

In a course of Lectures for the Board of Agriculture, delivered between 1802 and 1812. By Sir H. Davy.

WESTOVER MANUSCRIPTS,

Containing the history of the Dividing Line between Virginia and North-Carolina. By Wm. Bird of Westover.

THE BANK REFORMER. By Edmund Ruffin.

THEORY AND PRACTICE OF DRAINING AND EMBANKING. By John Johnston, Esq.

For sale at A. E. MILLER'S, No 4 Broad-st.

LIST OF PAYMENTS.

Hon. J. J. Evans, Society Hill,	1845	Dr. Robt. Williams, Florence, Geo.	1845
John M. Desaussure,	1842, '43, '44	Wm. Pope, Hilton Head.	1845
W. R Simons,	1845	Wm. Heyward, Grahamville,	1845
Rbt. Rodgers, Marsbluff,	1843, '44, '45	Dr. Richard Furman,	1845
Col. J. J. Moore, Stateburg,	1845	J. R. Valk, New-York,	1845
Dr. C. L. Desell,	1845	Wm. Lowndes,	1845
Wm. H. Mayrant,	1844, '45	Wm. Bold, Beaufort,	1844, '45
C. C. Pinckney, Sen.	1845	A. J. Anderson, Beaufort,	1844, '45
J. H. Tucker, Georgetown,	1845	J. T. H. White,	1845
W. B Seabrook, Edisto,	1845		

TO OUR READERS AND CORRESPONDENTS.

Our Number for March is still deficient of our usual supply of original articles, which must be attributed to the want of recollection on the part of many of our planter-friends, who have forgotten their promises.

We recommend the use of *Pottle's Improved Cotton-Gin*, some account of its work will be found on the 116 and 117th pages.

The red-skin sweet potato is recommended to the notice of our readers; and information called for as to its cultivation. Can any one reply to our "Q."

We have concluded Mr. R. W. Roper's Address, and ask for it an attentive perusal. Whether such reasoning will be answered by argument, in favor of domestic manufactures, time will show. But as slave property may now advance, many may be disposed to sell, and place their proceeds in manufactures.

PLOUGHS, &c.

The subscriber has constantly on hand, Ploughs of every description, embracing nearly all the patterns of Freeborn, Mayhu Davis, and those from the celebrated manufactory of Ruggles, Nourse and Mason His prices range from $3 to $10, according to the size and quality. Where many are taken and paid for at the time, a deduction will be made on the usual prices. Also Cultivators, Corn and Cob Crushers at reduced prices; Mott's Agricultural Furnaces, and every implement required for the field or garden.

J. D. LEGARE,
No. 81 East-Bay.

MILLER'S

Planters and Merchants' Almanac

For 1845,

☞ For sale at the rate of $6 per Groce